NEW RIVER AT BELL ROAD
FCD GAGE ID# 5598

STATION DESCRIPTION

LOCATION – The station is located just west of the Loop 101 freeway on the downstream side of the Bell Road bridge across New River. The gage equipment is located near the second pier of the bridge. Latitude N33° 38' 16.4", Longitude W112° 14' 23.3". Located in the NW1/4 NE1/4 NE1/4 S03 T3N R1E in the Hedgpeth Hills 7.5-minute quadrangle.

ESTABLISHMENT – The District established a gage at this location on April 4, 1990.

DRAINAGE AREA – 185 mi^2 most of which originates above New River Dam.

GAGE – The gage is a pressure transducer type instrument. The PT diaphragm is at gage height 0.10 feet, levels of April 18, 2000.

There are two staff gages at this location. The first is located near the pressure transducer. It reads directly in gage height. The second staff gage is painted on the second pier from the right bank. Add 0.14 feet to the painted staff gage to get readings in gage datum. All staff readings from levels of April 18, 2000.

There are two crest gages at this location. The lower crest gage has pin elevation of 0.27 feet gage height. The upper crest gage has pin elevation of 4.28 feet gage height, both levels of April 18, 2000.

ZERO GAGE HEIGHT - Zero feet gage height is equivalent to 1,192.02 feet NAVD 1988, levels of May 10, 2005.

HISTORY – The USGS began gaging on October 1, 1965. The station was discontinued September 30, 1984. The District established gaging on April 4, 1990. The USGS re-established gaging in June 1990. PT surveyed and found to be at 1.67 feet gage height on February 27, 1992. USGS discontinued gaging September 30, 1993. Some modification work to the bridge occurred in 1993 and 1994. The PT was reinstalled on May 11, 1994. PT at 0.1 feet gage height. Crest gages installed on October 16, 1996. References RM1 and RM2 established on April 18, 2000.

REFERENCE MARKS –

RM1 is a chiseled '+' in a concrete bridge rail on the left downstream side of the bridge, approximately 5 feet north of the station standpipe. Elevation = 14.42 feet gage height, levels of April 18, 2000. RM1 established on April 18, 2000.

RM2 is a chiseled '+' in the concrete apron approximately one foot downstream of the pier with the gaging sensors on the downstream side of the Bell Road bridge. Elevation = 0.01 feet gage height, levels of April 18, 2000. RM2 established on April 18, 2000.

RM3 is a rebar set in the ground about 8 feet south of the station tube. Elevation 12.49 feet gage height, or 1,204.51 feet NAVD 1988, levels of May 10, 2005. This monument was not found during the 2011 annual visit of April 27, 2011.

RM-4 is an ADOT aluminum cap southeast of the station tube. It is not tied to gage datum.

CHANNEL AND CONTROL – Channel above gage is wide with a mix of sand and cobbles interspersed with desert shrubbery. Below the gage the channel continues as upstream. An old irrigation siphon crosses the river about 250 feet below the gage. The drop past this feature is significant, about 5 feet. Low to medium flows are controlled by the concrete pipe structure crossing the streambed about 250 feet below the gage which acts as a weir with a precipitous drop. At high flows the channel is the control.

RATING – The current rating is Rating #2 developed by T. M. Donaldson and R. W. Cruff. The rating is a combination weir equation and HEC-2 step backwater model. The previous ratings were USGS ratings.

DISCHARGE MEASUREMENTS – Measurements can be made by wading at the channel near the gage. Bridge measurements are probably not possible due to the fencing separating the sidewalk from the edge of the bridge. Indirect methods could be employed in a reach upstream from the gage near 83rd avenue.

POINT OF ZERO FLOW – The PZF is approximately –0.07 feet gage height at the second pier from the right bank. The PZF at the gage pier is 0.00 feet gage height, levels of April 18, 2000.

FLOODS – A flood of 14,600 cfs/ 13.5 feet occurred December 19, 1967.A flood of 11,900 cfs/ 11.03 feet gage height occurred on September 5, 1970. A flood of 12,500 cfs/ 9.35 feet gage height occurred March 2, 1978.

REGULATION – New River Dam approximately 6 miles upstream regulates flows through its principal outlet, and allows a maximum of about 4,000 cfs. The dam's auxiliary spillway can pass much larger floods. No other major tributaries enter after the dam.

DIVERSIONS – None known

ACCURACY – Fair

JUSTIFICATION – Monitor flows in New River channel just above addition of Skunk Creek.

UPDATE – July 19, 2011
D. E. Gardner